

Topic / Issue: PCCOM RS232 Cable Information

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RS232 Connector Pin Assignments for DB9 and DB25

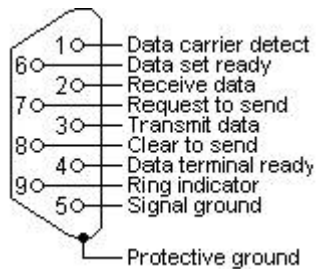
The original pin layout for RS232 was developed for a 25 pin D sub connector. In this pin-out configuration, provisions were made for a secondary communication channel. In practice, only one communication channel with accompanying handshaking is present. For that reason the smaller 9 pin version is more commonly used today.

The following diagrams show the signals common to both connector types in black. The signals only present on the larger connector (DB-25) are shown in red.

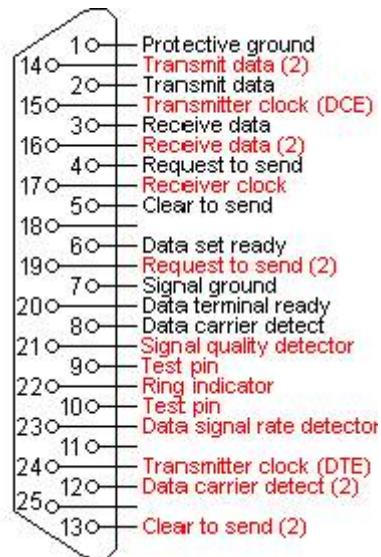
Note: The **protective ground** is assigned to a pin at the large connector (DB-25), in the DB9 version **protective ground** is connected to the physical connector.

The DEC modified modular jack is normally differential (the receive and transmit have their own floating ground level), but it is still possible to connect RS232 compatible devices with this interface.

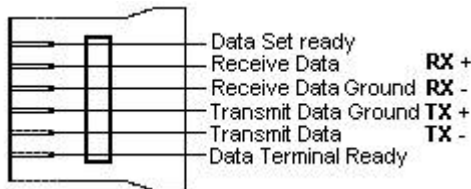
RS-232 DB-9 Pin Assignment



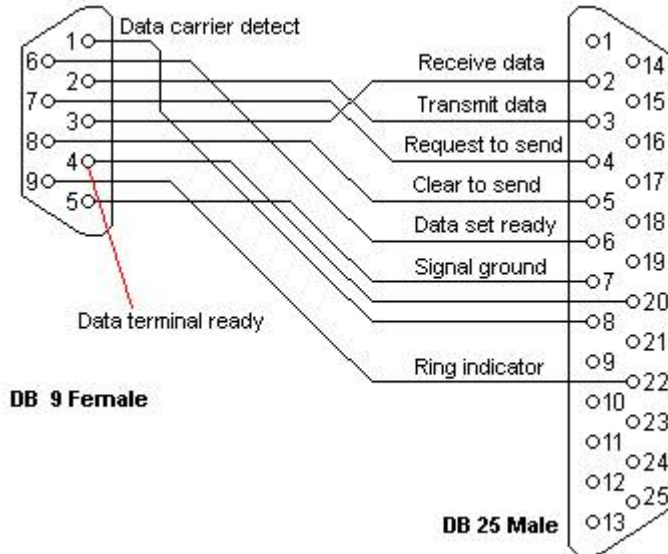
RS-232 DB-25 Pin Assignment



DEC MMJ Pin Assignment



DB-9 to DB-25 Converter for use on Modern PC systems



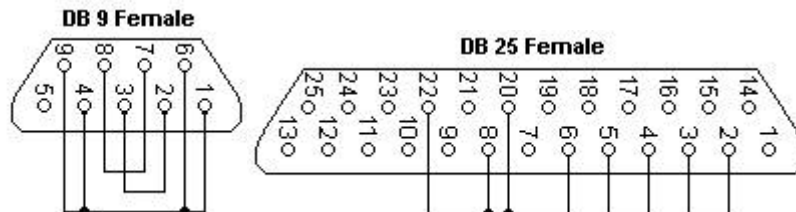
RS-232 Loop-Back Test Plug

The following connectors can be used to self-test a serial port on your computer.

The data and handshake lines have been linked.

In this way all data will be returned back to the sending device. (PC systems control their own handshaking).

RS232 Loop-Back Test Plug for PCCOM Diagnostics



RS232 Null Modem Cables

Using a null modem cable is the easiest way to connect two PC's.

For simple connections, a three line cable connecting the signal ground and receive and transmit lines is sufficient.

Depending on the software used, some sort of handshaking may however be necessary.

Use the selection table to find the right cable for each purpose.

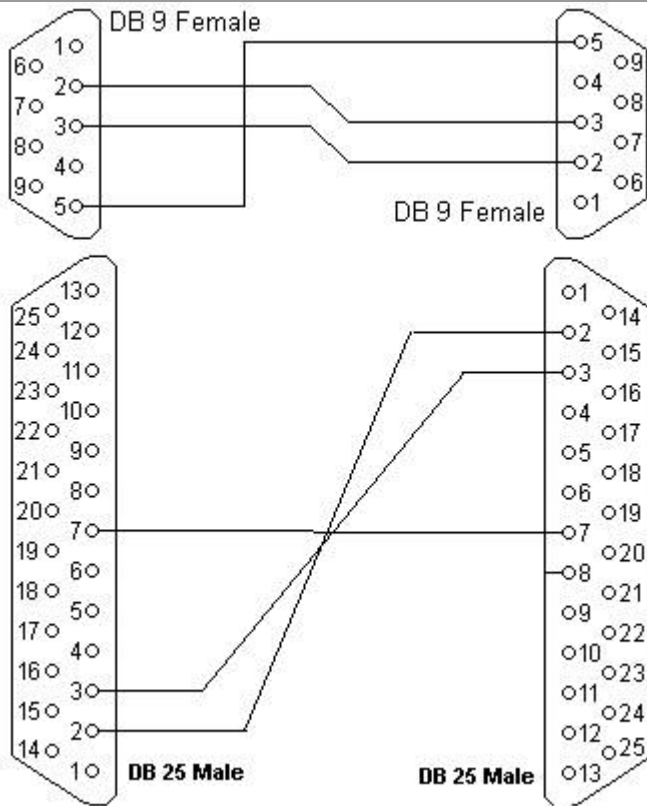
- For Microsoft Windows use direct cable connection, the null modem cable with perform hardware loop back handshaking.

Null modem cables with handshaking can be defined in numerous ways

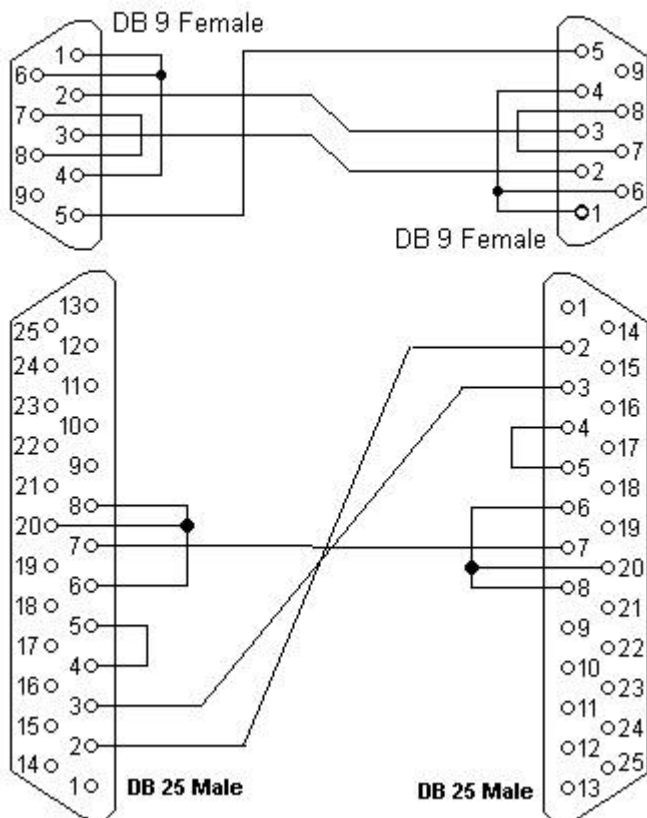
- A) With hardware loop back handshaking to each PC.
- B) or complete handshaking between the two systems.

The most common cable types are shown here

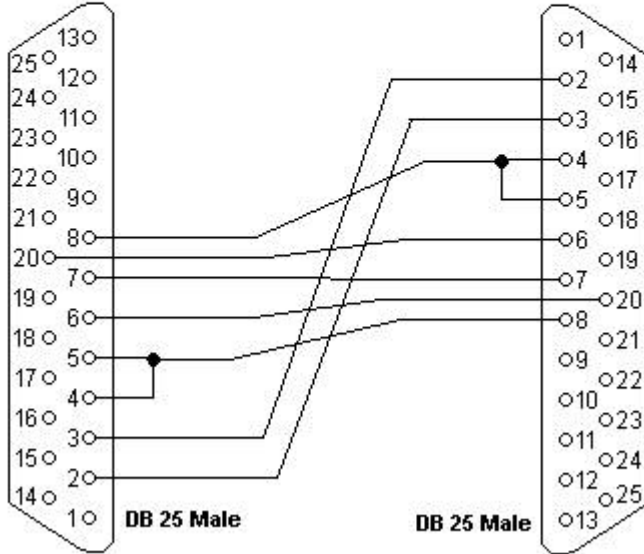
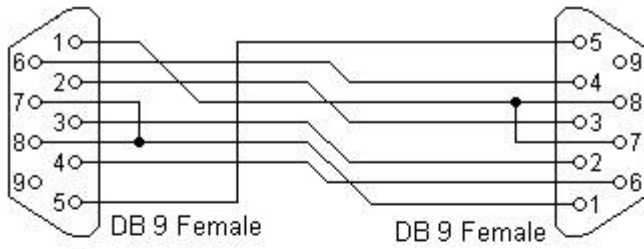
Simple Null Modem without Handshaking



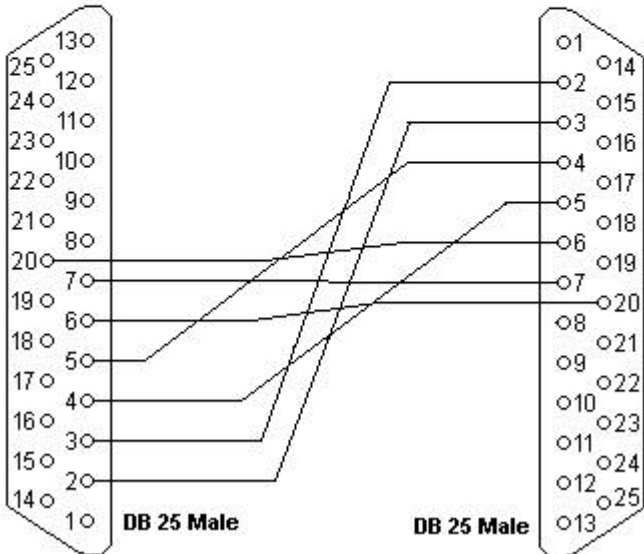
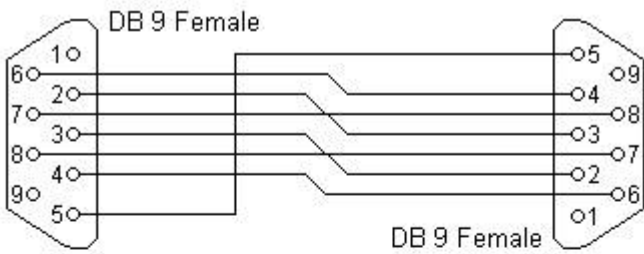
Null Modem with Loop-Back Handshaking



Null Modem with Partial Handshaking



Null Modem with Full Handshaking



Choose your Null Modem Cable

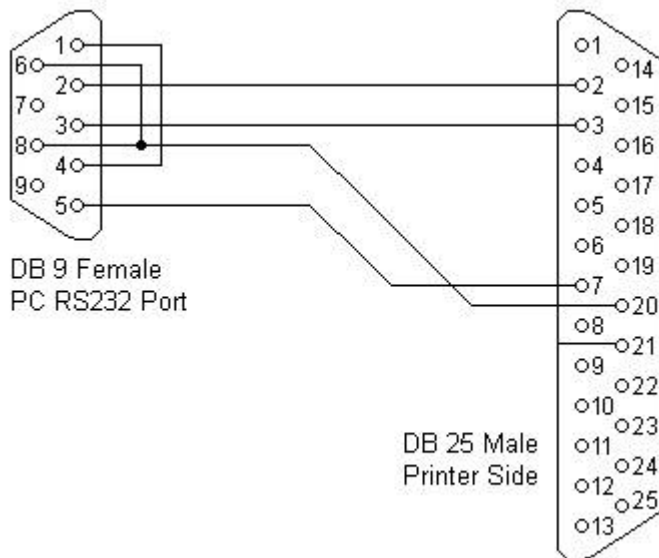
Use	Simple Cable Without Handshaking	Cable With Loop-Back Handshaking	Cable With Partial Handshaking	Cable With Full Handshaking
Software Flow Control Only	xxx	x	x	x
DTE/DCE Compatible Hardware Flow Control at Low Speeds	-	xxx	xx	-
DTE/DCE Compatible Hardware Flow Control at High Speeds	-	+	xxx	-
High Speed Communication using Special Software	-	-	xx	xxx

Note:

- xxx Recommended Cable
- xx Good Alternative
- x Works, But Not Recommended
- Does Not Work

RS-232 Printer Cable

When a serial printer is connected to a PC, the handshaking is not symmetrical. On the PC's side of the cable some of the handshaking lines are looped back. On the printer side only the data lines and one handshaking line is used.

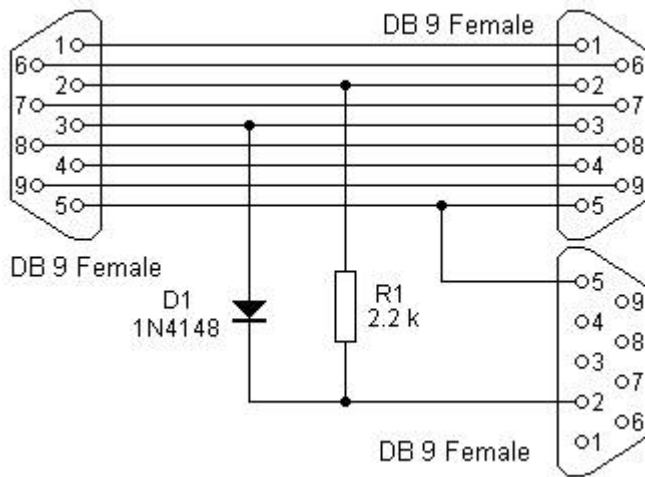


RS-232 Monitor Cable

It is not difficult to monitor the serial communication between two devices with a PC. To do this you need a "monitor cable".

The Two sockets are connected straight through.
The PC is connected to the third one.

This monitor cable taps communication from both sides.
This means that if the two devices happen to talk simultaneously, the monitored information will result in garbage.
In most circumstances communication software works in half duplex, so this would not be a problem.



Summary:
(If required)